

REMARKS

Step (3) of Claim 3 has been amended to recite “decreasing the contact angle of water by applying energy to the article . . . to release the substance for increasing the contact angle from the article.” Support for this amendment can be found at, for example, page 34, lines 11-17 and page 30, lines 9-12 of the present specification.

Review and reconsideration on the merits are requested.

Claims 3 and 15 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Hiroyuki et al (JP 09-241405) (“Hiroyuki”). Hiroyuki was cited as disclosing a process including the steps of releasing a substance from an article with an external force of ultraviolet radiation, where the substance comprises a photoactive substance and is emitted toward a substrate surface in order to form a solid surface rich in hydrophilic nature.

Applicants traverse, and respectfully request the Examiner to reconsider in view of the amendment to the claims and the following remarks.

Hiroyuki does not disclose step (3) of claim 3, where the surface of the article, which was once hydrophobilized in step (2), is hydrophilized by applying energy. Thus, the presently claimed invention defines novel subject matter.

For at least the above reason, it is respectfully submitted that the amended claims are patentable over Hiroyuki, and withdrawal of the § 102(b) rejection is respectfully requested.

Claims 3, 4, 15, and 36-37, and 46-47 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hayakawa et al (U.S. Patent Application Publication 2002/0016250) (“Hayakawa”).

Applicants respectfully traverse for the following reasons.

Hayakawa relates to an antifogging glass article. See Abstract of Hayakawa. The

surface of the glass article is coated with a coating layer containing a semiconductor photocatalyst such as titanium oxide and is hydrophilized by irradiation with ultraviolet rays.

See paragraph [0034] of Hayakawa.

The hydrophilization of Hayakawa is achieved by activating the semiconductor photocatalyst. In contrast, the presently claimed invention recites “*decreasing the contact angle of water on the article surface by applying energy to the article* to which the substance for increasing a contact angle of water was adhered *to release the substance for increasing a contact angle from the article.*” See step (3) of claim 3 (emphasis added).

In addition, the coating layer in Hayakawa is formed by applying a photocatalytic coating composition. See paragraph [0035] of Hayakawa. This forming step in Hayakawa’s process is different from step (1) and step (2) of the presently claimed invention.

As explained above, Hayakawa does not teach or suggest that, by applying energy to an article, the substance for increasing contact angle adheres to and releases from the surface of the article to change the properties of the surface of the article repeatedly.

Therefore, Hayakawa does not render claim 3 or claims 4, 15, and 36-37, and 46-47 obvious, because the latter claims depend from claim 3, either directly or indirectly.

In view of the above, reconsideration and withdrawal of the § 103(a) obviousness rejection are respectfully requested.

Claims 38-45 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hayakawa in view of Huang et al (U.S. Patent No. 6,352,758) (“Huang ‘758”) as supported by Huang et al (U.S. Patent No. 5,939,182) (“Huang ‘182”).

The Examiner asserts that Hayakawa discloses all of the requirements of claim 38 but fails to teach selectively forming the hydrophilic and hydrophobic portions by selectively

applying energy to a specific region. Huang '758 is relied upon as teaching a process for forming a patterned article containing alternating hydrophobic and hydrophilic surface regions, wherein a polymer matrix containing inorganic oxide particles disposed on a substrate and rendering the surface of the composite structure is hydrophobic and the selected portion of the polymer is removed by high energy treatment. The Examiner asserts that it would have been obvious to employ Huang '758, as supported by Huang '182, into Hayakawa's process "for forming an article with highly regular and controlled fashion and with particular shape or oriented at desirable uses of the article" as suggested by Huang et al.

Applicants respond as follows. The two Huang references disclose a typical patterning process. As explained above, since Hayakawa does not teach the method of controlling a contact angle on a surface of an article according to the presently claimed invention, even if both Huang references were considered, a person of ordinary skill in the art could not reach the presently claimed invention of claims 38-45.

In view of the above, Applicants respectfully submit that the claim 38 and claimed dependent thereon are not rendered obvious by Hayakawa in view of Huang '758 and Huang '182. Reconsideration and withdrawal are respectfully requested.

Claims 3, 4, 15 and 36-47 stand provisionally rejected on the ground of non-statutory obviousness-type double patenting as allegedly being unpatentable over claims 1-16 of copending Application No. 10/574,200.

In response, Applicants respectfully request that the Examiner hold this provisional rejection in abeyance until the "provisional" double patenting rejection is the only rejection remaining in at least one of the applications.

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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